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ABSTRACT

This course will provide the student with the general information, technical knowledge, basic skills, attitudes and values required for job entry as an auto body repair helper. Course content includes goals, specific objectives, orientation, service tools and bench skills, paint spray equipment, paint materials, and preparation of automobile body for paint. A bibliography and post-test are appended. The course "Automotive Body Fillers" is a prerequisite for entry into this course. (NH)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

V-101

DADE COUNTY PUBLIC SCHOOLS

Course Outline
AUTO BODY REPAIR AND REFINISHING 2
(Automotive Refinishing I)
Department 48 - Course 9035.04

DIVISION OF INSTRUCTION • 1973

D A D E C O U N T Y P U B L I C S C H O O L S

1 4 5 0 N O R T H E A S T S E C O N D A V E N U E

M I A M I, F L O R I D A 33132

Course Outline

AUTO BODY REPAIR AND REFINISHING 2
(Automotive Refinishing I)

Department 48 - Course 9035.04

county office of

VOCATIONAL AND ADULT EDUCATION

THE SCHOOL BOARD OF DADE COUNTY

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Dr. E. L. Whigham, Superintendent of Schools
Dade County Public Schools
Miami, Florida 33132

December, 1972

Published by the School Board of Dade County

Course Description

9035	48	9035.04	AUTOMOTIVE REFINISHING I
State Category Number	County Dept. Number	County Course Number	Course Title

This quinmester course is designed as one of a group of quinmester courses offered in the field of auto body repairs. The student will receive the general information, technical knowledge, basic skills, attitudes and values that are required for job entry as auto body repair helper. The student will receive instructions in metal preparation prior to painting. Training will include priming and masking of glass and moldings. This course will be given in a 9-week period.

Indicators of success: The applicant must demonstrate an eighth grade equivalency score in reading and math, also have average ability in mechanical aptitudes.

Clock Hours: 135

PREFACE

The following quinmester course outline is a guide to help students become employable with skills, knowledge, attitudes and values necessary for performing the required service of the automotive r inishing repairman.

This course is designed as a foundation quinmester course for the auto refinishing repairman.

This outline consists of 6 blocks of instructions which are subdivided into several units each. It is only one part of a series of quinmester outlines assigned for the complete auto body repairman. This course is 135 hours in length.

Prerequisites for this course is as follows: the student should have an eighth grade equivalency score in reading comprehension, arithmetic fundamentals and mechanical aptitude. The student must be physically and mentally able to profit from this training.

Prior to entry in this course, the vocational student will display mastery of the skills indicated in Automotive Body Fillers 9035.03.

Instruction will consist of demonstrations, lectures, group discussions and audio visual aids and resource people from industry. Instruction will be flexible to meet individual needs and abilities.

The bibliography appearing on the last pages of this outline lists several basic references, also supplementary references and audio visual aids.

This outline was developed through the cooperative efforts of the instructional and supervisory personnel, the Quinmester Advisory Committee, and the Vocational Curriculum Materials Service and has been approved by the Dade County Vocational Curriculum Committee.

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with Suggested Hourly Breakdown

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GOALS

The auto body trainee must be able to demonstrate:

1. Pride and respect for craftsmanship for this occupational field.
2. Safe work habits and proper shop behavior to guard against accidents.
3. Positive attitudes regarding the value and dignity of work.
4. An incentive to continue with more advanced training within the occupational field.
5. The skills and knowledge to select and use tools and equipment of the auto body and refinishing profession.
6. The skills and knowledge to identify and explain the function of the automotive air supply system.
7. The skills and knowledge to identify and explain functions of automotive paint supplies.
8. The ability to perform paint operations preparatory to refinishing.

SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. List the opportunities that are available for career in the auto body and refinishing occupational field by written assignment.
2. State what will be expected of him as an auto body repairman and painter by written or oral examination.
3. Demonstrate skills and knowledge which will prepare him for a safe working life by actual shop practice.
4. Demonstrate pride and respect for workmanship by his attitude and performance.
5. Demonstrate an understanding of shop organization by written assignment.
6. Demonstrate understanding and acceptance of personal responsibilities by his actions in classroom or laboratory.

BLOCK II - SERVICE TOOLS AND BENCH SKILLS

The student must be able to:

1. Identify and explain the general type of hand tools and their use by written test.
2. Exhibit the ability to use the applicable tools and perform bench skills in a proper manner by selection and use.
3. Demonstrate proper care and maintenance of hand tools by following written instructions.
4. Exhibit the ability to observe and practice safety precautions in the use of hand tools by his performance in shop or laboratory.
5. Exhibit the ability to identify power tools and equipment by study of text and manuals.
6. Demonstrate the ability to perform maintenance and repairs to power tools by performance in shop or laboratory.
7. Exhibit the ability to practice safety precautions by observing safety rules and regulations.

BLOCK III - PAINT SPRAY EQUIPMENT

The student must be able to:

1. Demonstrate the ability to explain the air supply system by drawing a diagram of supply lines.
2. Exhibit the ability to identify the types of air compressors and function by written assignment.
3. Demonstrate the ability to describe the function of air transformers by oral or written test.
4. Exhibit the ability to identify types of automotive spray guns and components by written assignment.
5. Demonstrate the ability to disassemble and assemble paint spray guns by performance.
6. Exhibit the ability to observe care and maintenance of spray paint accessories.

BLOCK IV - PAINT MATERIALS

The student must be able to:

1. Demonstrate the ability to identify the different types of sandpaper and their uses by oral or written examination.
2. Exhibit the ability to select and use the different types of masking tape by selection and use.
3. Exhibit the ability to select and use the different sizes of masking paper by selection and use.
4. Demonstrate an understanding of primer surfacer and its function by study of text and manuals.

BLOCK V - PREPARATION OF AUTOMOBILE BODY FOR PAINT

The student must be able to:

1. Demonstrate the ability to select the proper cleaning material by selection and use.
2. Demonstrate an understand of the function of cleaning materials by study of text and paint manuals.
3. Exhibit the ability to prepare rust surface for painting by actual performance.
4. Exhibit the ability to prepare chipped and pitted surface for painting by his performance.
5. Demonstrate the ability to completely sand automobile body preparatory for paint by selection of sand paper and use.
6. Exhibit the ability to mask automobile body preparatory for painting by actual performance.

BLOCK VI - QUINMESTER POST TEST

The student must be able to:

Satisfactorily complete the quinmester post test.

Course Outline

AUTO BODY REPAIR AND REFINISHING 2
(Automotive Refinishing I)

Department 48 - Course 9035.04

I. ORIENTATION

A. Objectives of Course
   1. Standards
   2. Methods of evaluation
      a. Written test
      b. Oral test
      c. Manipulation
      d. Diagnosis and job performance
   3. Safety
   4. Training methods

B. Student Benefits
   1. Opportunities for employment
      a. Job opportunities
      b. Scope of trade
   2. Qualification for employment
      a. Attitude
      b. Dependability
      c. Pride of workmanship
      d. Job competency
      e. Experience
      f. Trade certificate
      g. Foundation for more education and training

C. Student Responsibilities
   1. Safety regulations
   2. School policies and expenses
   3. Shop rules and regulations
      a. Care of hand tools
      b. Use and care of equipment
      c. Housekeeping
      d. Appropriate dress
      e. Materials and supplies
      f. Reporting defective equipment
      g. Reporting loss of equipment
      h. Employee-employer relations
      i. Employee-customer relations

II. SERVICE TOOLS AND BENCH SKILLS

A. Automotive Hand Tools
   1. Use and safety precautions

II. SERVICE TOOLS AND BENCH SKILLS (Contd.)

2. Types and sizes
   a. Wrenches
   b. Screwdrivers
   c. Pliers
   d. Molding tools
   e. Putty knife

B. Power Tools
   1. Types and sizes
   2. Use and safety precautions
   3. Care and maintenance
      a. Sanders
      b. Drills
      c. Spray gun
      d. Impact wrench

III. PAINT SPRAY EQUIPMENT

A. Air Supply System
   1. Compressors
      a. Types
      b. Sizes
      c. Care and maintenance
   2. Air transformers
      a. Types
      b. Sizes
      c. Care and maintenance
      d. Function
      e. Safety

B. Paint Spray Guns
   1. Types
   2. Sizes
      a. Pressure
      b. Suction
      c. Internal mix
      d. External mix
   3. Care and maintenance
      a. Disassembling
      b. Cleaning
      c. Assembly and adjusting
      d. Safety
   4. Accessories
      a. Hose
      b. Blow gun
      c. Adjusting valve

IV. PAINT MATERIALS

A. Sand Paper and Discs
   1. Types
   2. Manufacture
      a. Dry
      b. Wet or dry
      c. Bonding method
      d. Grit
      e. Function

B. Masking Tape
   1. Types
   2. Sizes
   3. Manufacture
      a. Adhesives
      b. Function

C. Masking Paper
   1. Manufacture
   2. Types
      a. Weight
      b. Size
      c. Function

D. Primer-Surfacer and Reducer
   1. History and development
   2. Manufacture
   3. Types
      a. Lacquer
      b. Enamel
      c. Function

V. PREPARATION OF AUTOMOBILE BODY FOR PAINT

A. Cleaning
   1. Use of solvents
      a. Mineral spirits
      b. Silicone and wax remover
      c. Enamel reducer
      d. Cleaning rags
   2. Purpose
      a. Remove wax
      b. Remove tar
      c. Remove grease

B. Sanding Surface
   1. Rust
      a. Grinding
      b. Sanding
      c. Featheredging
      d. Priming

V. PREPARATION OF AUTOMOBILE BODY FOR PAINT (Contd.)

2. Chipped and pitted surface
   a. Featheredging
   b. Priming
   c. Glazing
3. Complete sanding
   a. Dry
   b. Wet
   c. Block sanding
   d. Orbital sanding

C. Masking Automobile Body
1. Tape
2. Masking paper
   a. Glass
   b. Moldings
   c. Ornaments
   d. Weatherstrips
   e. Bumpers

IV. QUINMESTER POST TEST

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Basic References:

1. Frazee, Irving, Bedell, Earl L., Spicer, Edward D. Automotive Collision Work. Chicago, Ill: American Technical Society, First Ed., 1953. Pp. 343.

Supplementary References:

2. Davis, Ewart J., Spicer, Edward D., Venk, Ernest. Automotive Collision Work. Chicago, Ill: American Technical Society, Third Ed., 1964. Pp. 389.

3. Hobson, W.T. Automotive Refinishing-Second Ed. Wilmington, Delaware: E. Dupont De Nemours and Co., Refinishing Division. Pp. 120.

4. Tobolt, Bill. Auto Body Repairing and Painting. Homewood, Ill: Goodheart-Wilcox Co., 1965. Pp. 224.

A P P E N D I X

Quinmester Post Test Sample

Quinmester Post Test

Name _____ Date _____ Score _____

Multiple Choice

Each statement requires a word or phrase to be correct. Only one of the choices listed is correct. Circle the number you believe to be correct at left of item.

1. Disc grinders are used to:

   1. grind paint
   2. grind weld
   3. grind plastic
   4. all of above

2. Automobile body trim moldings are secured by T bolts, weld on bolts and various types of clips. The wrench sizes for removal of T bolts is:

   1. 3/8"
   2. 5/16"
   3. 1/4"
   4. all of above

3. The type of sheet metal screws used more often in securing automobile trim items is:

   1. Phillips head
   2. Pan head
   3. Clutch head
   4. Allen head

4. The size wrench used on a 5/16" bolt is:

   1. 9/16"
   2. 1/2"
   3. 5/8"
   4. 3/8"

5. The size wrench used on a 3/8" bolt is:

   1. 3/4"
   2. 7/16"
   3. 9/16"
   4. 5/8"

6. The size wrench used on a ¼" bolt is:

   1. 7/8"
   2. 3/4"
   3. 7/16"
   4. 9/16"

7. The type of socket used on a square nut is:

   1. 8 point
   2. 6 point
   3. 12 point
   4. none of above

8. The purpose of using silicone and wax remover to wash ~~to~~ automobile body surface before sanding is:

   1. to remove dust
   2. to remove old paint
   3. to remove wax, road tar and silicone
   4. to soften old paint

9. When preparing an automobile body for painting in enamel, sanding should be done by using:

   1. #320 sand paper
   2. #80 sand paper
   3. #40 sand paper
   4. #150 sand paper

10. When preparing an automobile body for painting in lacquer, sanding should be done by using:

   1. #40 sand paper
   2. #400 sand paper
   3. #80 sand paper
   4. #100 sand paper

11. Before masking off moldings preparatory to painting, they should be thoroughly:

   1. sanded
   2. cleaned
   3. waxed
   4. sprayed with clear lacquer

12. Masking tape is furnished in various widths; the widths most commonly used for masking an automobile body is:

   1. 3/4"
   2. 1/2"
   3. 1/4"
   4. all of above

13. The first automobile bodies were painted with a brush using:

   1. lacquer paint
   2. enamel paint
   3. varnish and lamp black
   4. house paint

14. Featheredging is accomplished by:

1. grinding edges of paint
2. filing edges of paint
3. using sanding block or orbital sander
4. none of above

15. Primer surfacer is used to:

1. fill grinder marks
2. build up repaired areas
3. fill sand scratches
4. all of above

16. Glazing putty is used to:

1. fill pin holes
2. fill deep scratches
3. fill imperfection in metal repairs
4. all of above

17. Lacquer primer surfacer is reduced by using:

1. enamel reducer
2. lacquer thinner
3. mineral spirits
4. gasoline

18. When applying primer surfacer the air pressure should be approximately:

1. 55 to 60 lbs.
2. 45 to 50 lbs.
3. 65 to 70 lbs.
4. 15 to 20 lbs.

19. The function of an air transformer is to:

1. remove oil
2. regulate air pressure
3. remove condensation
4. all of above

20. The first paint spray gun was invented and used in:

1. 1920
2. 1932
3. 1924
4. 1918

21. In the same year the spray gun was first used; a different type of paint was also produced, it was called:

1. Delux enamel
2. Duco lacquer
3. Preparakote
4. Lucite

22. Dry sandpaper cannot be used in water because:

1. The sand separates from backing.
2. It absorbs water.
3. It dissolves.
4. none of above

23. The first automobile to be painted with Duco lacquer was a:

1. 1930 Cadillac
2. 1928 Chrysler
3. 1932 Buick
4. 1924 Oakland

24. The ingredients of paint top coats are:

1. pigment
2. binder
3. solvent
4. all of above

Answer Key to Quinmester Post Test

1. #4
2. #4
3. #1
4. #2
5. #4
6. #3
7. #1
8. #3
9. #1
10. #2
11. #2
12. #4
13. #3
14. #3
15. #4
16. #4
17. #2
18. #2
19. #4
20. #3
21. #2
22. #1
23. #4
24. #4